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09/742,751	12/20/2000	Tatsuya Anma	SIMTEK5685	6449

7590 12/22/2004  
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EXAMINER

GONZALEZ, JULIO C

ART UNIT	PAPER NUMBER
2834	

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 11

Application Number: 09/742,751

Filing Date: December 20, 2000

Appellant(s): ANMA ET AL.

\_\_\_\_\_  
Ernest A. Beutler

19,901

For Appellant

**EXAMINER'S ANSWER**

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This is in response to the appeal brief filed 12/09/02.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is substantially correct.

The changes are as follows: The Miyao reference 4,737,674 has never been cited in the present application 09/742,751, thus the issue that the reference 4,737,674 overcomes the defects of Miyao 4,739,203 is irrelevant to the present application.

Even more, the Appellant stated that Miyao 4,737,674 does not disclose an electrical angle of 120° to 140° (see co-pending application 09/778,338, page 7, paragraph 4 of Appeal Brief filed 09/07/04), which contradicts the Appellant's own statement "(Miyao reference 4,737,674 overcomes the defect of reference Miyao 4,739,203 by disclosing a 120° to 140° electrical angle)" on the Issues Before the Board in the Present Application.

**(7) *Grouping of Claims***

Appellant's brief includes a statement that claims 1,3 and 4 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) *Prior Art of Record***

4,739,203	Miyao et al.	4-1988
6,323,572	Kinoshita	11-2001
6,396,183	Tajima et al	5-2002
4,672,253	Tajima et al	6-1987

**(10) Grounds of Objection**

***Drawings***

1. The drawings in the interest of completeness of the record before the Board, the objection to the drawings are reproduced here since the drawings stand objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: protective coating 25. A proposed drawing correction or corrected drawings have not been filed.
2. The drawings stand objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Specifically, **the 120° to 140° electrical angle of the magnets set to the rotational axis** and the **non-magnetized areas between the magnets** as disclosed in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

**(11) Grounds of Rejection**

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable under Miyao et al (Patent # 4,739,203) in view of Kinoshita.

Miyao et al discloses permanent magnets 1, 2, armature winding 27 (see figures 4, 8, 17) and that the magnetic poles of the magnets have an electrical angle of 120 degrees (column 2, lines 1-4).

However, Miyao does not disclose having non-magnetized areas between the magnets.

On the other hand, Kinoshita discloses for the purpose of improving the performance of motor and generators, a non-magnetized area 16 between the magnets (see figure 2B).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design a rotating machine as disclosed by Miyao and to modify the invention by placing non-magnetized areas between the magnets for the

purpose of improving the performance of motor and generators as disclosed by Kinoshita.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyao and Kinoshita as applied to claim 1 above, and further in view of Tajima et al (US Patent 6,396,183).

The combined rotating machine discloses all of the elements above. However, combined rotating machine does not disclose having the coils fixed against rotation.

On the other hand, Tajima et al discloses for the purpose of providing an electric machine with small cogging torque, a stator 22 with fixed windings and rotating magnets (see figure 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined rotating machine as disclosed above and to modify the invention by making the magnets rotate for the purpose of providing an electric machine with small cogging torque as disclosed by Tajima et al.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyao and Kinoshita as applied to claim 1 above, and further in view of Tajima et al (US Patent 4,672,253).

The combined rotating machine discloses all of the elements above. However, combined rotating machine does not disclose the electrical machine to be a generator.

On the other hand, Tajima et al discloses for the purpose of reducing cogging torque, an electrical machine that can function as a motor or a generator (see abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the combined rotating machine as disclosed above and to modify the invention by making the electrical machine function as a generator for the purpose of reducing cogging torque as disclosed by Tajima et al.

**(12) Response to Argument**

(a) As disclosed in claim 1, "a rotating machine having a plurality of permanent magnets having alternating polarity in a circumferential direction", Miyao et al shows in figure 13, a rotating machine having a plurality (two magnets) having alternating polarity in a circumferential direction and the magnets are positioned at



equal circumferential intervals as shown in figure 13 by Miyao et al. Also, Miyao et al discloses using an electrical angle of 120 degrees (column 2, lines 1-5), which falls within the range disclose in the claim.

Moreover, according to the Modern Dictionary of Electronics, the electrical angle is defined to be – a quantity that specifies a particular instant a cycle of alternating current. One cycle is considered to be 360°, so a half cycle is 180° and a quarter cycle is 90°. Miyao et al discloses that the magnetic poles have an angular electrical angle of 120° (column 12, lines 40 – 42) and the armature coils 51-2 have an electrical angle of 120° (column 12, lines 63 –68). Thus, Miyao et al teaches that the magnetic poles of a rotor and coils of a stator, in a cycle, have an electrical angle of 120°. Clearly, Miyao et al does not disclose that the electrical angle is a natural physical angle as alleged in the Appeal Brief. Moreover, the mechanical angle would be the natural physical angle and Miyao et al differentiates between both the electrical angle and the mechanical angle (column 12, lines 40 – 44), which concerns the natural location of the physical parts (poles, coils, etc) of the electrical machine (column 12, lines 67, 68).

A second reference Kinoshita was used in the obviousness rejection of claim 1. Kinoshita shows, for the purpose of improving the performance or motor and generators that it is common in the field of art, to have non-magnetized areas 16

between magnets (see figure 2B & specially 5A & column 6, line 59). As illustrated in figure 5A, the non-magnetized area 16 is surrounded by magnets 14. Also, as very well known in the art, if a magnet is broken in two pieces, two magnets are obtained instead of one-half of a magnet and as illustrated by Kinoshita in figure 5A. It is clearly seen, there is a non-magnetized area 16 *between two magnets 14*. Also, it is important to notice that the drawings fail to show such non-magnetized areas between the magnets as disclosed in claim 1. It was brought to the applicant's attention. However, such requirement (illustrating the non-magnetized areas between the magnets) was not shown or explained and complied in any way, thus the prior art was applied as best understood.

(b) In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

(c) In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both references, Miyao et al and Kinoshita are in the field of electrical machines, more specifically concern motors and generators and improvements to such devices. Kinoshita shows that it is highly desirable to have non-magnetized areas between magnets in order to increase the power (column 5, lines 14 – 19), thus it constitutes strong motivation to combine both references.

(d) In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., air gaps between the magnets; avoid starting devices; the magnets disposed so that they subtend a relatively small arc related to the time in which a single wave of electrical current passes through the associated coil; gaps between adjacent magnets; magnets coextensive and having iron cores and the magnets

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interposed between them so that there is a continuous magnetic field) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,

Jcg

December 13, 2004

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